

REMARKS

Claims 1-49 are all the claims pending in the application.

Claim Rejections - 35 U.S.C. §112, Second Paragraph

Claims 13, 14, 15, 23, 25, 26, 28, 31, 33, 34, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants traverse this rejection as follows.

The Examiner contends that “the term disclosed in the claims 13, 23, and 31, ‘*friction factor*’ renders the claim indefinite since the Applicants have failed to explain the definition of the term adequately. Specifically, Examiner respectfully submits that *friction factor* (*i*s determined by the friction occurred between two objects which come into a contact with each other and thus a single object cannot have such characteristic.” (*Office Action*, p. 2).

To the contrary, Applicants submit that MPEP § 2173.02 indicates that:

The examiner’s focus during examination for compliance with the requirement for definiteness of 35 U.S.C. § 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression is available.

Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) The content of the particular application disclosure;
- (B) The teachings of the prior art; and
- (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

Here the Examiner contends that the friction factor is determined by the friction occurring between two objects. To the contrary, Applicants submit that the friction factor as

described in claims corresponds to the coefficient of friction, and further, one of ordinary skill in the art would recognize it as such. As used within the present specification in a non-limiting exemplary embodiment, "the pushing component 4 is formed by a material, which is harder than the rubber sheet 3 and whose **friction factor** is smaller than the rubber sheet, therefore, the pushing component 4 slides smoothly on the resin sheet 6. (p. 19, lines 19-23) (emphasis added).

Furthermore, one of skill in the art would recognize the friction factor (coefficient of friction) may be assigned only to a single surface. In fact, it is widely recognized that each particular material surface, alone, may be tested and assigned a coefficient of friction.

Reproduced below is a table of such friction factors from the Engineer's Handbook.¹

		Coefficient Of Friction			
MATERIAL 1	MATERIAL 2	Dry		Greasy	
		Static	Sliding	Static	Sliding
Aluminum	Aluminum	1.05-1.35	1.4	0.3	
Aluminum	Mild Steel	0.61	0.47		
Brake Material	Cast Iron	0.4			
Brake Material	Cast Iron (Wet)	0.2			
Brass	Cast Iron		0.3		

¹ Available at <http://www.engineershandbook.com/Tables/frictioncoefficients.htm> (last visited 2/21/2007)

Therefore, Applicants submit that one of ordinary skill in the art would find the term “friction factor” as used in the claims, definite. Thus, Applicants respectfully request that the Examiner withdraw this rejection.

Claim Rejections - 35 U.S.C. § 102(b)

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Morimoto et al. (US 6,373,265). Applicants traverse this rejection as follows.

Claim 1 recites, *inter alia*, “sensors that at least detect movement in a horizontal direction that is substantially parallel to said cabinet surface.”

The Examiner contends that Morimoto discloses this feature. Specifically, the Examiner alleges:

[S]ensors (“*fixed electrodes Dx-, Dx+, Dy-, Dy+, Dz-, and Dz+*”) that at least detect movement in a horizontal direction that is substantially parallel to the cabinet surface, of the sliding key (as the Morimoto’s sliding key is moved in a horizontal direction Mx, the “*conductive rubber layer section 21*” comes into a contact with the “*fixed electrodes*”, and thus the device detects the movement of the sliding key) [fig. 3].

(*Office Action*, p. 3)

However, Applicants respectfully submit that neither this portion of Morimoto, nor any other portion, disclose a sensor that detects movement in a horizontal direction. To the contrary, sensors Dx, Dy and Dz merely detect forces Fx, Fy and Fz applied to the operation portion 20a. (*See FIGS. 3 & 4*). These forces are all in the vertical direction and are detected in the following manner. When, for example, a force Fx is applied to the operation portion 20a, the gap between electrode D and the fixed electrode Dx+ is narrowed resulting in an increase in the variable electrostatic capacitance of section Cx. (col. 5, lines 64 through col. 6, lines 1-18). Accordingly, by varying the **gap** between the electrode D and Dx+, or their corresponding counterparts Dy+,

Dz+, etc., the force is detected. Therefore, the capacitive touch sensor S merely measures a change in this **gap** which occurs in the vertical direction. Thus, to the extent that the touch sensor S detects the movement of the operation part 20a, only the vertical movement of 20a is detected.

Moreover, because Morimoto discloses that the conductive rubber section 21 is disposed across the whole of the fixed electrodes and functions as the electrode D, the touch sensor S is not capable of detecting which portion of D has become in closer contact with the fixed electrodes (Dx, Dy, Dz). Therefore, the touch sensor S is not capable of detecting a horizontal movement. In conclusion, even though the operation part 20a may move in a horizontal direction, this movement is not detectable, only the vertical component of any movement is detectable.

Thus, Applicants submit that Morimoto fails to disclose sensors that at least detect movement in a horizontal direction that is substantially parallel to said cabinet surface, as recited in claim 1. Applicants submit that claim 1 is allowable for at least this reason. Additionally Applicants submit that claims 2-4 are allowable, at least because of their dependency.

Claim Rejections - 35 U.S.C. § 103(a)

Claims 1-4, 9-12, 16-22, 24, 27, 29 and 40-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatsuka et al. (US 2004/0080491) in view of Kobachi et al. (US 2001/0007449). Applicants traverse this rejection as follows.

The Examiner alleges that Takatsuka teaches most of the features recited in independent claim 1, but concedes that Takatsuka fails to teach or suggest wherein the

sliding key is fixed on the outside surface of said elastic sheet. (*Office Action*, p. 4) To compensate for this deficiency, the Examiner applies Kobachi alleging that it teaches an input device including a slidable body portion fixed to an elastic portion. (*citing FIG. 29A*)

As a motivation to combine the references, the Examiner provides that “it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takatsuka’s input device such that its sliding key is attached to its elastic sheet, as taught by Kobachi, in order to allow the sliding key of Takatsuka’s input device to gain a greater restoring force during the input operation [par. (0181)].”

In response, Applicants submit that the Examiner has failed to establish *prima facie* obviousness because the motivation, teaching or suggestion to combine the references, is unsupported by Kobachi. Furthermore, even if the references are combined as suggested by the Examiner, Applicants submit that the suggested combination fails to teach or suggest a sliding key attached to an elastic sheet.

In particular, the Examiner relies on paragraph [0181] of Kobachi to provide the motivation to combine. However, even if Kobachi could be construed to teach a slidable body portion fixed to an elastic sheet, the motivation provided by the Examiner only supports that concentric spiral spring 2’ (FIG. 29B), to which the operating portion 1 is fixed, applies a restoring force. (par. [0181]). Accordingly, because the Examiner has not provided a valid motivation to fix Takatsuka’s sliding key to an elastic sheet, but instead, merely provides a motivation to fix the sliding key to a spring, Applicants submit that the Examiner has failed to establish *prima facie* obviousness.

Additionally, even if combined as suggested by the Examiner, the applied combination fails to teach or suggest a sliding key fixed to an elastic sheet. Specifically, the operating portion 2 of Kobachi is fixed to the concentric spiral spring 2', not an elastic sheet. Furthermore, the embodiment applied by the Examiner fails to even teach or suggest that base 4 could be construed as an elastic sheet. However, even if base 4 could be construed as an elastic sheet, the operating portion 1 is not fixed to the base 4, but to the contrary, moves relative to the base 4 as shown in FIGS. 30A and 30B.

Therefore, because the Examiner has failed to provide a valid motivation to combine and the suggested combination fails to teach or suggest all the features recited in claim 1, Applicants submit that the Examiner has failed to establish *prima facie* obviousness.

Accordingly, Applicants submit that claim 1 is allowable for at least this reason. Additionally, because independent claim 22 recites features similar to those argued above with regard to claim 1, Applicants submit that claim 22 is allowable for the same reasons set forth above. Finally, Applicants submit that claims 2-4, 9-12, 16-21, 24, 27, 29 and 40-49 are allowable, at least because of their dependency.

Improper Use of Official Notice

With regard to claims 11 and 12, the Examiner takes official notice that the detecting units disclosed in claims 11 and 12 are equivalent with the magnet sensor disclosed in claim 9 for their uses in detection of the movement of objects and the use of *any* of these known technologies or devices to detect the movement of the sliding key would be within the level of ordinary skill in the art.

With regard to claim 19, the Examiner takes official notice that it is well known in the art to include a nonskid part such as a rubber or a plastic having high friction ratio on the outer surface of an inputting key for electronic devices such as laptop computer, mobile phone, and PDA.

In response, Applicants submit that the MPEP states that “[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertion of technical facts in the areas of esoteric technology or **specific knowledge of the prior art must always be supported by citation to some reference work recognized as a standard in the pertinent art.**” (MPEP § 2144.03, p. 2100-134).

Here, the Examiner merely concludes that it is well known in the art to have the feature of which official notice has been taken. However, because the MPEP requires that the Examiner support that this knowledge of the prior art be supported by citation to a reference, which the Examiner has failed to do, Applicants submit that the “Official Notice” is improper. Because this assertion of “Official Notice” does not comply with the procedure outlined in the MPEP, Applicants respectfully request that the Examiner withdraw these assertions of Official Notice or provide an object reference to support these positions.

Additionally, with regard to claims 11 and 12, the Examiner merely states in a conclusory fashion that these detecting units to detect the movement of a sliding key would be within the level of ordinary skill in the art. However, because the Examiner has failed to even identify this

structure in the prior art, the Official Notice must be improperly based on the Examiner's own personal knowledge without any factual support.

With regard to claim 19, the Examiner again states in a conclusory fashion that it is well known in the art to include a nonskid part such as a rubber or a plastic having high friction ratio on the outer surface of an inputting key for electronic devices such as laptop computer, mobile phone, and PDA. However, because the Examiner has failed to even identify this structure in the prior art, the Official Notice must be improperly based on the Examiner's own personal knowledge without any factual support.

Claim Rejections - 35 U.S.C. § 103(a)

Claims 5-8, 30, 32, 35, 37, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatsuka and Kobachi as applied to claims 1-4, 9-12, 16-22, 24, 27, 29 and 40-49 above, and further in view of SanGiovanni (US 6,967,642). Applicants traverse this rejection as follows.

The Examiner alleges that Takatsuka and Kobachi as applied above teach or suggest most of the features recited in claim 5, but concedes that the Takatsuka/Kobachi combination fails to teach or suggest, a surrounding key. (*Office Action*, p. 11) In order to compensate for this deficiency, the Examiner applies SanGiovanni, alleging that this reference teaches or suggests "a surrounding key (a plurality of "*input sensing devices 120*") comprising a ring shape larger than the opening of a central portion ("*central portion 104*") including a central inputting key ("*120*)."

As a motivation to combine, the Examiner contends that "it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takatsuka to

include a surrounding key around its sliding key, as taught by SanGiovanni, in order to provide a plurality of inputting means for Takasuka's mobile device." (*Office Action*, p. 11).

In response, Applicants respectfully submit that the Examiner has failed to establish *prima facie* obviousness for the following reasons:

- (1) SanGiovanni fails to compensate for the above noted deficiencies of the Takatsuka/Kobachi combination as applied above, and thus, fails to teach or suggest "a sliding key that is fixed on the outside surface of said elastic sheet," as recited in independent claims 5 and 30;
- (2) Neither SanGiovanni, Takatsuka nor Kobachi, taken alone or in combination, teach or suggest a surrounding key fixed to an elastic sheet; and
- (3) The motivation to combine provided by the Examiner is unsupported by the references.

First, because SanGiovanni, either taken alone or in combination with the Takatsuka/Kobachi combination as applied above, fails to teach or suggest, "a sliding key that is fixed on the outside surface of said elastic sheet," the applied combination fail to teach or suggest all the features recited in independent claims 5 and 30. Accordingly, claims 5 and 30 are allowable for the same reasons set forth above with regard to claim 1.

Thus, Applicants submit that claims 5 and 30 are allowable for at least this reason. Additionally, Applicants submit that claims 6-8, 30, 32, 35, 37, 38 and 39 are allowable, at least because of their dependency.

Second, Applicants submit that Neither SanGiovanni, Takatsuka nor Kobachi, taken alone or in combination, teach or suggest a surrounding key fixed to an elastic sheet. As discussed above, neither Takatsuka nor Kobachi teach or suggest any key attached to an elastic sheet. Furthermore, no portion of SanGiovanni teaches or suggests, or even contemplates an elastic sheet. Thus, the suggested combination fails to teach or suggest, “a surrounding key fixed to an elastic sheet,” as recited in claim 5.

Accordingly, Applicants submit that claim 5 is allowable for at least this reason. Additionally, because claim 30 recites a similar feature, Applicants submit that claim 30 is allowable for the same reasons. Finally, Applicants submit that claims 6-8, 30, 32, 35, 37, 38 and 39 are allowable, at least because of their dependency.

Third, the motivation to combine provided by the Examiner is unsupported by the references. In particular, the Examiner provides that “[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takatsuka to include a surrounding key around its sliding key, as taught by SanGiovanni, in order to provide a plurality of inputting means for Takasuka’s mobile device.” (*Office Action*, p. 11).

In contrast, Applicants submit that no portion of SanGiovanni teaches, suggests, or even contemplates any sliding key. Specifically, SanGiovanni merely teaches of several angular pedals 102 (keys) surrounding a raised dot 106. Here, the Examiner is merely using prohibited hindsight gleamed from Applicants claims to pick and choose various elements from the individual references so as to arranged them as recited in the claims. No portion of SanGiovanni teaches or suggests using any sliding key. In fact, to the contrary, San Giovanni

teaches that the surrounding keys surround raised dot 106, which is not taught or suggested to be a sliding key. Accordingly, Applicants submit that the Examiner's purported motivation to combine is unsupported and invalid.

Thus, because the Examiner's motivation to combine the references is unsupported, Applicants submit that the Examiner has failed to establish *prima facie* obviousness. Therefore, Applicants submit that claims 5-8, 30, 32, 35, 37, 38 and 39 are allowable for this additional reason.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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